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REQUEST FOR QUALIFICATIONS

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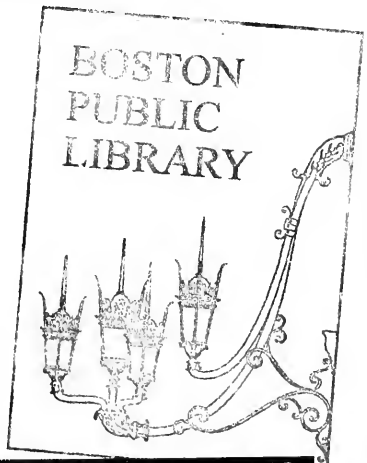
for

Engineering Services Relative to the Rehabilitation of Various Public Roadways

City of Boston
Public Works Department
Office of the Division Engineer
Joseph F. Casazza, Commissioner



Submitted by:
BETA Engineering, Inc.

July 31,1989

BETA ENGINEERING, INC

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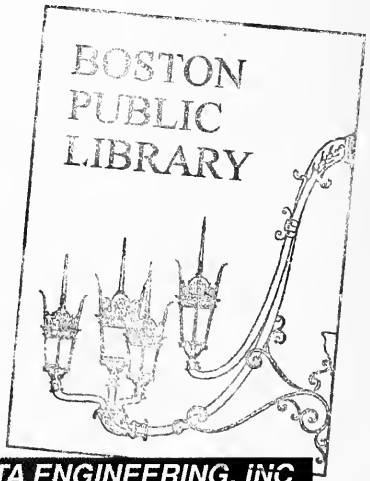

Submitted by:
BETA Engineering, Inc.

July 31,1989

BETA ENGINEERING, INC

BETA ENGINEERING, INC.
CONSULTING ENGINEERS & PLANNERS

July 31, 1989

Mr. Joseph F. Casazza
Commissioner
Public Works Department
400 Frontage Road
Boston, MA 02118

Dear Mr. Casazza:

BETA Engineering, Inc., looks forward to the opportunity to provide engineering services in the reconstruction of various public roadways in the City of Boston.

Our Transportation Planning Division has provided professional planning and design services for a variety of clients in the southern New England area. These projects range from an extensive internal circulation study and environmental assessment of a 1,000-acre industrial park for the State of Rhode Island to roadway reconstruction projects undertaken for numerous municipalities and agencies.

The team we have assembled possesses the experience and enthusiasm necessary to take the most innovative approach possible to your project, ensuring you the highest quality engineering services in a timely and professional manner. Based on conversations with your engineering department, we have gained a thorough understanding of the magnitude of the project, and are confident of our ability to complete your project well within the required four months.

While BETA Engineering has not yet had the opportunity to work with the City of Boston, we look forward to that opportunity in the near future. To that end, we have included a list of references in our submittal. I encourage you to contact these individuals to gain a better insight into the quality of our services.

Should you have any questions or require additional information, please do not hesitate to contact me. We are extremely interested in working with the City of Boston on this project, and we look forward to the opportunity to submit a formal proposal for your review.

Very truly yours,

BETA ENGINEERING, INC.

Michael E. Grilli

Michael E. Grilli, P.E.
President

MEG/tm

197 PORTLAND STREET, BOSTON, MA 02114
PHONE: 617/227-BETA
FAX 617/227-2189

6 BLACKSTONE VALLEY PLACE, LINCOLN, RI 02865
PHONE: 401/333-BETA
FAX: 401/333-9225

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BETA Engineering, Inc., is committed to providing the highest quality engineering, planning and environmental services to our clients in a timely, efficient and professional manner.

Our firm specializes in civil engineering and its associated specialities, including master planning and a full range of environmental services. BETA's diverse staff provides expertise in all aspects of environmental, transportation, structural, site engineering and community planning. Specifically, our services include:

- ***Comprehensive Community and Facilities Planning***
- ***Water Distribution Modeling, Analysis, and Design***
- ***Traffic Planning and Design***
- ***Road and Bridge Design***
- ***Solid Waste Disposal***
- ***Aviation Planning and Design***
- ***Construction Management***

With offices at 197 Portland Street, Boston, Massachusetts, and 6 Blackstone Valley Place, Lincoln, Rhode Island, BETA Engineering is ideally located to serve southern and central New England clients. These clients have included municipalities, state governments, the federal government, private developers, and other professional consultants.

Currently, BETA Engineering has projects estimated at $40 million under construction management, including wastewater treatment plant rehabilitation, sewerage system improvements, roads, bridges, and private development. The growth experienced by the firm is the result of the active participation of the firm's principals and a staff that prides itself on hard work, innovation, and personal commitment to the client. The principals alone have combined experience of almost 40 years.

BETA's staff consists of experienced professionals, including engineers, planners, and highly trained technicians. Our staff's expertise ranges from civil, environmental, structural, and transportation engineering to environmental, transportation, land use, and aviation planning. The staff is led by nine Professional Engineers with registrations in Rhode Island, Massachusetts, Connecticut, Maine, New Hampshire, Vermont, and New York. Spearheading our projects are experienced project managers with responsive accounting and cost controlling support.

Looking towards the future, BETA is equipped with state of the art computer-aided design, analytical, and graphic presentation capabilities, enabling us to develop and edit higher quality drawings in a cost effective manner. We also routinely use many sophisticated engineering and software programs to perform computer modeling, analysis, and design on our roadway, traffic, master planning, utility, hydraulic, hydrologic, and structural projects.

Our unique blend of people offers a wide and varied scope of services not readily found within other firms. This diverse staff, along with BETA's professional qualifications, project experience, and flexibility allows us to assemble a highly specialized team for each project we undertake.

Large or small, each effort we undertake is met with the same goal in mind: to provide the high quality engineering and environmental services our clients expect, in a timely, cost-effective, and professional manner.

Transportation Engineering and Planning

BETA Engineering, Inc., has provided professional planning and design services for a variety of clients in the southern New England area. These projects range from an extensive internal circulation study and environmental assessment of a 1,000 acre industrial park for the State of Rhode Island to the design of state highways, drainage systems, signalization plans and utilities.

With respect to projects in the planning and highway design field, BETA Engineering has extensive expertise in the following areas:

* ***roadway design***
* ***alignment & geometry***
* ***signalization improvements***
* ***drainage studies & design***
* ***environmental impact analysis (assessments & evaluations)***
* ***structural analysis & design***
* ***lighting***
* ***traffic analysis/planning***
* ***historic preservation***
* ***community relations***
* ***noise, air & water impact evaluation***
* ***construction management***

The following is a categorical review of this experience. It provides a summary of important considerations, client names, project summaries, and costs. Of particular relevance to your project is BETA's work in the following projects, which serve as excellent examples of our particular expertise in roadway reconstruction:

* Reconstruction of Warwick Avenue, Warwick, RI
* Reconstruction of Greenhill Road, Johnston, RI
* Reconstruction of Six Corners, East Providence, RI
* Reconstruction of Gooding Avenue, Bristol, RI
* Reconstruction of Post Road, Warwick, RI
* Reconstruction of Route 102 (Victory Highway), Foster, Coventry, West Greenwich, RI
* Improved Access to Quonset Point/Davisville from Route 4, East Greenwich, RI
* Reconstruction of South Natick Square, Natick, MA

1. Highway, Signalization, and Drainage Design

Project Considerations:

To develop the most responsive, technically superior, and practical design solution for projects of this nature, BETA Engineering is constantly researching and investigating design improvement alternatives. Towards this end, BETA has established and continually updates

an extensive computer hardware and software library. Examples of BETA's software capabilities are:

A. CEAL (Coordinate Geometry, Digital Terrain Model, Graphics)
B. AutoCAD (Computer Graphics))
C. HEC -1, TR-20 (Flood Hydrographs)
D. HEC-2 (Water Surface Profiles)
E. TR-55 (Peak Discharge Analysis)
F. Culvert (FHWA Culvert Analysis)
G. HCM (Highway Capacity Manual)
H. SICAP (Signalized Intersection Capacity Program)
I. PMS (Pavement Management System)
J. Structural (Miscellaneous Structural Analysis Programs)

The software systems are complemented by a Computer-Aided Design (CAD) system, superlative technical menu, computer graphics, and the leadership of professional engineers with over 10 years of experience in the highway and signal system design field.

Client: RI Department of Transportation
Project: Statewide Traffic Signal Improvement Program
Project Cost: $600,000

As part of a Preliminary and Final Engineering design project, BETA Engineering is conducting traffic signal warrant analyses, capacity analyses, and preparing conceptual and final design plans for the signalization of 12 high-priority state highway intersections. Design plans include intersection geometry improvements.

Client: RI Department of Transportation
Project: Reconstruction of Warwick Avenue (Four Phases)
Project Cost: $10,000,000

Three phases of this project are completed. One phase (Hoxsie Four Corners to Sandy Lane) is being designed. These projects included the study and design of this roadway for total reconstruction. Improvements have included roadway/pavement reconstruction, vertical and horizontal alignment modifications, an upgrade of the closed drainage system, and intersection improvements, including signalization and channelization. BETA's personnel were responsible for all conceptual and final design development, wetland impact evaluation, permitting, and public participation.

Client: Town of Randolph, MA
Project: Intersection Improvements, Randolph, MA
Project Cost: $1,000,000

In conjunction with this conceptual analysis and design project, BETA is currently completing the final design phase which has included traffic signal studies for seven intersections, conceptual design, including geometric improvements, traffic signal hardware layout, right-of-way acquisition, and the preparation of final design plans and bidding documents. Two

of the intersections have also involved major channelization improvements, roadway reconstruction, drainage and utility improvements, and the preparation of project funding application.

Client: Town of Natick, MA
Project: Reconstruction of Eliot Street and South Natick Square
Project Cost: $1,000,000

BETA Engineering prepared a design study report and will prepare final design plans for the reconstruction of two miles of roadway and a major signalized intersection. Special design considerations and coordination meetings were required for recommended improvements within the John Eliot Historic District. BETA addressed impacts to abutting businesses, access and parking concerns, underground utility relocation, landscaping, and other amenities such as brick sidewalks and crosswalks.

Client: Bristol, RI
Project: Reconstruction of Broad Common Road (2 Phases)
Project Cost: $830,000

This roadway reconstruction project included roadway and profile design in addition to utility layout drainage system and pavement improvements. Coordination with state and local agencies and permitting was required.

Client: Bristol, RI
Project: Drainage Improvement - Various Locations
Project Cost: $2,500,000

This drainage systems improvement design included the inventory and evaluation of existing utilities and drainage system. The design of new catch basins and pipe drainage systems and cross culverts was required. Coordination with state and local agencies and permitting were important elements of this project.

Client: RI Department of Transportation
Project: Reconstruction of Gooding Avenue
Project Cost: $1,500,000

BETA is completing final design plans for this project which includes total roadway reconstruction, vertical geometry, drainage, intersection, and traffic flow improvements, signing, utility adjustments, right-of-way acquisition, traffic signal design, environmental impact evaluation and permitting. Coordination of public participation efforts was required.

Client: RI Solid Waste Management Corporation
Project: Reconstruction of Greenhill Road, Johnston, RI
Project Cost: $2,500,000

This project involved the reconstruction of the main access road to the Central Landfill in Johnston. Improvements to this 1-mile roadway included the installation of a sewer pump

station, force mains, drainage, and roadway reconstruction.

Client: City of Warwick, RI
Project: Cowesett Road Drainage Improvements

This project involved a drainage and subdrainage installation in a town road to correct groundwater and surface water flooding problems. Included in this project were roadway repaving, erosion control measures, and utility relocations.

Client: RI Department of Transportation
Project: Reconstruction of Post Road, Warwick, RI
Project Cost: $7,000,000

This roadway reconstruction project covered the area of Post Road from Warwick Avenue to Airport Road. The project included reconstruction in and through a congested commercial district and required extensive drainage and utility redesign. BETA personnel were involved in all design levels, which included vertical and horizontal realignments. Substantial environmental impact analysis and permitting were required as part of this project.

Client: RI Department of Transportation
Project: Reconstruction of Route 102 (Victory Highway), Foster, Coventry, West Greenwich, RI

This project covered three towns and resulted in the rehabilitation of this major rural highway. BETA personnel were involved in its redesign, environmental assessments, and all levels of permitting. Extensive coordination work was required due to the multi-jurisdictional aspects of this project.

Client: RI Department of Transportation
Project: Improved Access to Quonset Point/Davisville from Route 4 (East Greenwich)

BETA personnel were involved in the preliminary design and Draft Environmental Impact Statement associated with this project, which involved the design of numerous connector roads between Route 4 and the Quonset Point Technical Park. Connector improvements included an upgrade of the existing Devil's Foot Road and the design of a new freeway to improve access to this major port and industrial complex. An Environmental Impact Statement was required given the potential impacts on sensitive natural areas, aquifers, and social, commercial, and residential environments.

2. Bridges and Highway Structures Design

Project Considerations:

The design of highway bridges and structures requires careful analysis to ensure the development of serviceable structures. The structure must be designed within the given

constraints of location and the environment. Special consideration must be given to local aesthetics. Coordination with state and federal agencies is also very important.

BETA utilizes the most up-to-date analysis techniques, including computer-aided analysis and design. Software capabilities include frame and truss analysis, in addition to steel, concrete, and prestressed concrete design.

Client: Massachusetts Department of Public Works
Project: Route 128 - Exit 21 Interchange
Project Cost: $8,000,000

As part of the interchange construction the design of a two-span overpass is required. The overpass will be approximately 200' long and 80' wide.

Client: Rhode Island Department of Transportation
Project: Reconstruction of Six Corners Bridge East Providence, RI

Part of the reconstruction of the intersection requires repair or replacement of the existing concrete slab bridge. An inspection and elevation of the existing structure is required to determine the extent of reconstruction necessary.

Client: Rhode Island Department of Transportation
Project: Various Span Poles, Mast Arms, Etc.
Project Cost: $600,000

Several signal support structures and foundations have been installed in an ongoing project with the RIDOT. The span poles and mast arms must be analyzed for adequacy and allowable deflections. The foundations must be designed to ensure the safe and stable support of the traffic signals.

Client: Rhode Island Department of Transportation
Project: Barden Reservoir and Hemlock Brook Bridges, Foster, RI
Project Cost: $750,000

This project included the design of two prestressed concrete bridges to replace existing deteriorated bridges. The bridges, which were 65' long and 35' long, had to be designed within the constraints of the Providence Water Supply Board requirements.

Client: Rhode Island Department of Transportation
Project: Block Island Bridge No. 140
Project Cost: $400,000

This projected included the inspection and evaluation of the existing 70 year old concrete structure. Recommendations for the aging structure in a coastal scenic area included replacement with a prestressed concrete bridge and granite abutments.

Client: Rhode Island Water Authority
Project: Big River Reservoir

Two bridges associated with this project included a prestressed concrete 102' span for Harkney Hill Road over the discharge channel, and a prestressed concrete service road bridge from the dam to the intake structure.

Client: Massachusetts Water Resources Authority
Project: 36" Water Main - Bridge over Route 128
Project Cost: $500,000

This project included the design and construction management of a 160' 2 span steel pipe bridge over Rt. 128 in Woburn, MA. The 36" water main crossed Rt. 128 as part of a water distribution project. The bridge had to be designed to provide sufficient clearance from traffic underneath as well as to protect the pipe in the event of impact.

Client: Connecticut Department of Transportation
Project: 25 Bridges - Bridge Replacement Program
Project Cost: $2,000,000

These projects included the inspection, evaluation, repair, and reconstruction of bridges for the States Bridge Replacement Program. The design of replacement structures included the use of steel, concrete, prestressed concrete, timber, and stone. Various structure types had to be analyzed, including rigid frames, thru plate girder, trusses, continuous spans, and arches.

3. Traffic and Transportation Planning

Project Considerations:

Transportation planning is the process by which transportation analysis and improvements are conceived, tested as to present and future adequacy, and programmed for future construction or implementation. BETA Engineering's team of planning and engineering professionals has the knowledge and experience necessary to fully analyze all alternative solutions to a problem, test them, and present the best alternatives to its clients. This process is accomplished within the context of a full evaluation of all factors affecting the task at hand.

Client: Massachusetts Department of Public Works
Project: Route 128 - Exit 21 Interchange
Project Cost: $8,000,000

This project, being conducted for the Massachusetts Department of Public Works, consists of the preparation of an Environmental Assessment and 25% design plans for the construction of a new freeway interchange. Included in this project is an evaluation of the realignment of Route 128 within the project area as well as a feasibility study of various interchange

configurations. Responsibilities include project management; liaison activities between MDPW, local communities, and our subconsultants; development of future traffic projections; alignment development evaluation; and the coordination of all environmental studies.

Client: Rhode Island Department of Transportation
Project: Quonset Point Technical Park - Subarea Analysis Study

BETA is currently conducting this environmental assessment and preliminary engineering study for the RIDOT. The goal of the project is to provide an internal circulation system within the Quonset Point Technical Park that will adequately service the future traffic volumes associated with full development of the site. Specific tasks to be performed by BETA include project management and coordination; public participation; preliminary engineering of proposed improvements; development of future traffic projections; and the completion and/or coordination of all required environmental studies. The types of improvements to be considered for this project range from the addition of new arterial roadways, to the construction of fringe parking areas with associated shuttle services.

Client: Rhode Island Department of Transportation
Project: Traffic Circulation Study & Reconstruction of Six Corners, East Providence

This assignment is a major urban intersection and roadway reconstruction project which includes an arterial roadway system within the study area limits. BETA conducted an origin-destination (O/D) study using license plate matching surveys to develop and evaluate alternative circulation patterns to the existing one-way system. The selected alternative will include signalization, signing, pavement marking, channelization improvements, and roadway overpass improvements. This project requires special coordination with other RIDOT state highway projects in the area. The results of the traffic circulation and O/D studies have provided BETA with a working knowledge of traffic operation in the area.

Site Development and Master Planning

Project Considerations:

The development of a communitywide master plan or a specific design for a particular piece of property requires the complete analysis of the factors affecting the site. The resulting site layout or master plan reflects a comprehensive analysis of those findings and a recommended course of action—a plan.

BETA Engineering has assembled a team of professionals from a multitude of disciplines, who are capable of communitywide or small lot analysis. They represent the fields of engineering, planning, community development, and biological/environmental analysis.

The BETA team can provide the following analytical capabilities and master planning services:

- *Communitywide Master Planning*
- *Wetlands/Flood Plain and Vegetation Analysis*
- *Historical Evaluation*
- *Layout*
- *Drainage*
- *Parking Plans*
- *Utility Designs*
- *All Levels of Permitting*
- *Landscape Design*
- *Housing*
- *Economic Development*
- *Transportation Planning*
- *Infrastructure Analysis*
- *Zoning & Subdivision*
- *Solid Waste Management*
- *Growth Management*

BETA's movement into the Master Planning field is the result of a rigorously defined, comprehensive, and scientific approach to the analysis of a community, its limitations, and potential. BETA is now investigating the most recent developments in this field, including the development of Geographic Information Systems. BETA has access to the most modern and accurate mapping systems available.

1. Site Development

Client: Feldman Realty Company
Project: Diamond Hill Shopping Center
Project Cost: $1,000,000

A 125,000 square foot shopping center with a 750 space parking lot includes design and layout of the parking facility, on-site drainage and utilities, grading, and building layout. Also included is detention basin design and an interconnected traffic signal design. BETA obtained all local and state permits.

Client: Bellmore Realty Company
Project: Ceruolo Property Subdivision, Framingham, MA
Project Cost: $500,000

This 22 lot residential subdivision includes design of roadways, sewers, water systems, lot grading, and retaining wall design. This project also included wetland restoration, detention basin design and the obtaining of all local and state permits.

Client: State of Rhode Island, Department of Corrections
Project: Industrial Facility Program
Project Cost: $1,500,000

For the Department of Corrections, a new industrial facility to house a portion of the industries program. Work included a prefabricated building, grading, drainage, roadways, security fencing, and utilities.

Client: Burrillville, RI
Project: Wastewater Treatment Facility Site Improvements

Design of site improvements at the Wastewater Treatment Facility to accommodate growing inventory of equipment and materials. Items of work included a building, drainage, fencing, and site stabilization.

Client: Coventry Development Corporation
Project: Coventry Estates, North Andover, MA
Project Cost: $2,000,000

Coventry Estates, a 70 lot residential subdivision design, included roadway design, grading, drainage floodplain study, detention basin design, utility design, geometry, surveying, and permitting.

Client: Joseph and Francis Biotti
Project: Liberty Tree Acres, Boxborough, MA
Project Cost: $1,500,000

Liberty Tree Acres, a 60 lot residential subdivision design, included roadway design, grading, drainage, floodplain study, detention basin design, utility design, subsurface sewage disposal system design, geometry, survey, coordination with state and local authorities, and agencies and permitting.

Client: Tom Williams
Project: Leominster Subdivision, Leominster, MA
Project Cost: $3,000,000

A 96 lot cluster subdivision, including design of nearly three miles of roadways, sewers, water distribution lines, drainage, and grading. This project also included designs of a water storage tank and pump station, retention/sand filter ponds to mitigate water quality impacts, and flood control structures.

2. Master Planning

Client: Deering, New Hampshire
Project: Hoodkroft Golf Courses

Preliminary analysis of the feasibility to create an additional nine holes. BETA provided layout and preliminary permitting investigation work.

Client: Blackstone Valley District Commission
Project: Comprehensive Sewerage Plan

A complete evaluation of the existing treatment system and collection facilities. Future needs and recommendations for future system development and implementation were provided.

To ensure that the City of Boston is provided with the highest quality engineering and design services, BETA Engineering has assembled a team of Professional Engineers and technical staff with exceptional skills in the area of highway, drainage and utility system design.

The individuals selected for this effort have extensive professional and project related experience.

MICHAEL E. GRILLI, P.E.: *Mr. Grilli, President of BETA Engineering, will serve as Project Executive. In this capacity, Mr. Grilli will be responsible for meeting all contractural obligations, monitoring the performance of BETA personnel, conducting management reviews, and initiating corrective action, as required.*

FRANK J. ROMEO, P.E.: *Mr. Romeo will serve as your Project Manager for this effort. Mr. Romeo has over ten years of experience in the field of Transportation and Traffic Engineering. Mr. Romeo is supervisor of our Engineering and Planning Division. An Associate with BETA, Mr. Romeo will be your primary contact on a day -to-day basis. He will be responsible for overall design quality , cost control and the timely completion of this project. He will be the key coordinator of all project participants and the public as required during the course of the project.*

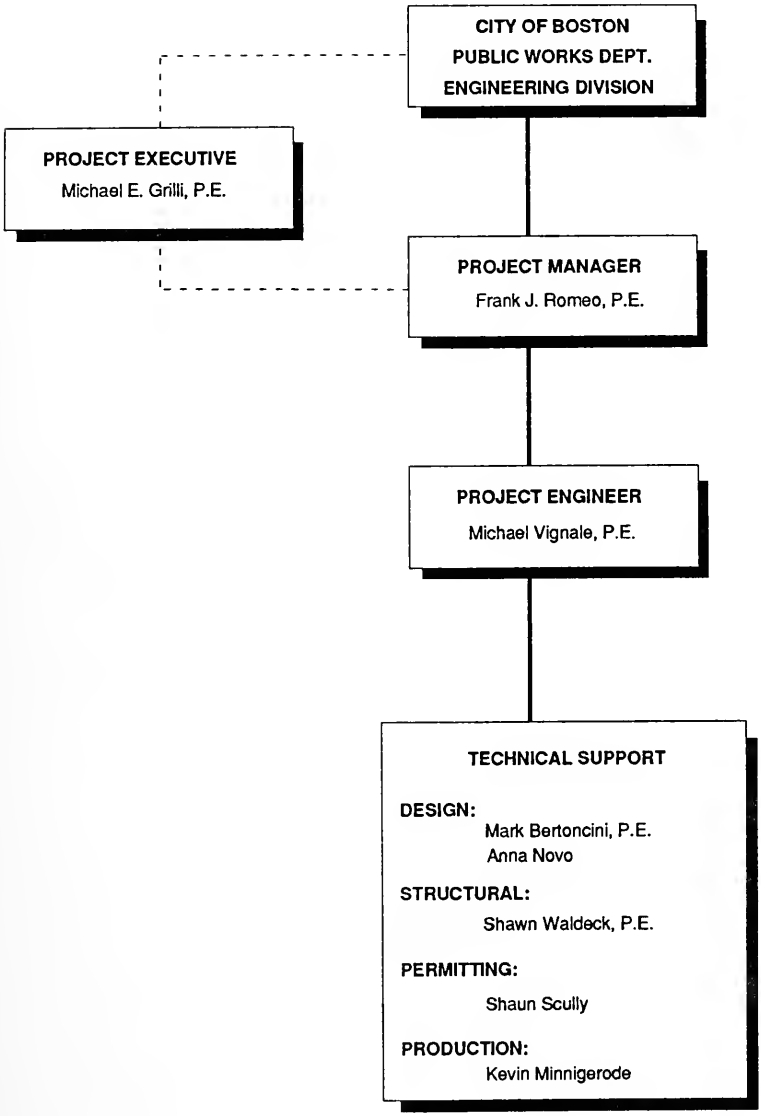
MICHAEL S. VIGNALE, P.E.: *Mr. Vignale will be your Project Engineer for this project. Mr. Vignale has been BETA's lead staffperson for all land subdivision, roadway, drainage and flood control projects. He has been our principal design specialist. Mr. Vignale has extensive AutoCAD and CLM highway design and graphic software systems experience.*

DESIGN/TECHNICAL SUPPORT

The following individuals will provide professional design and technical support services to ensure the successful completion of this effort.

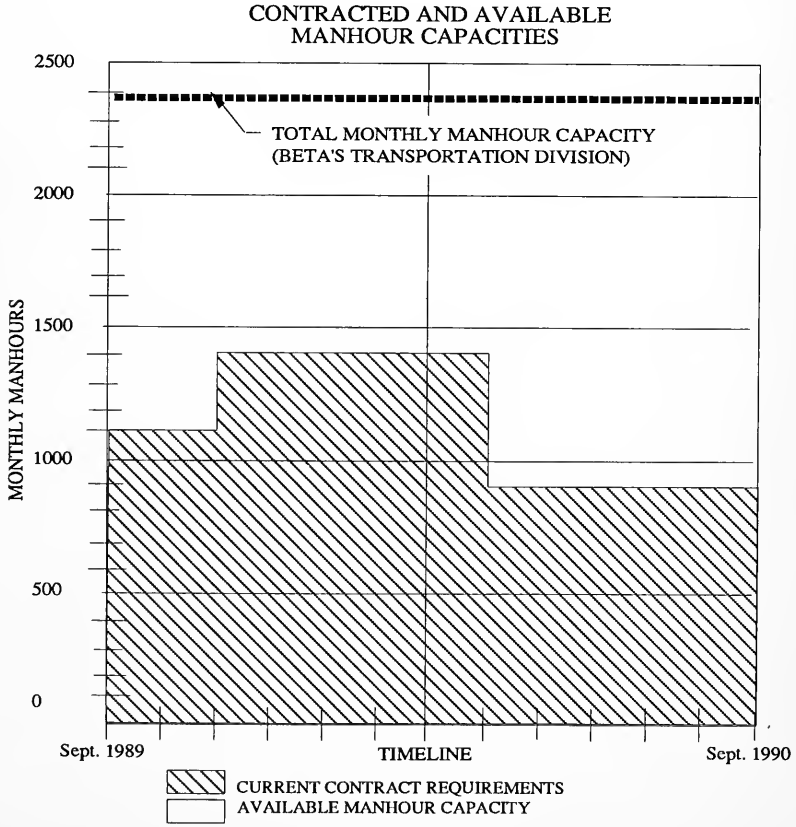
MARK BERTONCINI, P.E. *(Design)*
SHAWN WALDECK, P.E. *(Structural)*
ANNA NOVO *(Technical Design)*
SHAUN SCULLY *(Permitting)*
KEVIN MINNIGERODE *(Field Edit/Production)*

PROJECT ORGANIZATION



BETA Engineering has ample manhours available to complete this project in the four-month time frame established by the Public Works Department.

The graphic which accompanies this text indicates that BETA has a total monthly manhour capacity of 2,400 hours in our Transportation Division. At present, and through the four-month period of this contract, we will have available, on average, 1,000 manhours per month to dedicate to this project. Currently, 58% of our capacity (1,400 manhours) is contracted through this period.



We encourage our potential clients to contact these individuals concerning our capabilities.

The following references are familiar with the quality of services provided by BETA Engineering. We encourage our potential clients to contact these individuals concerning our capabilities.

1) RHODE ISLAND DEPARTMENT OF TRANSPORTATION
Ronald E. DelVecchio, Chief
RI Department of Transportation
331 State Office Building
Providence, RI
(401) 277-2495

2) TOWN OF MANSFIELD, MASSACHUSETTS
Robert Swanson, P.E., Town Engineer
Town Hall
Mansfield, MA
(508) 261-7375

3) MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS
John Gaynor
10 Park Plaza - Room 4260
Boston, MA
(617) 973-7486

4) TOWN OF NATICK, MASSACHUSETTS
Charles Sisitsky, Planning Director
Town Hall
13 East Central Street
Natick, MA
(508) 651-7260

5) TOWN OF RANDOLPH, MASSACHUSETTS
Henry Lowd
Town Hall
2 South Main Street
Randolph, MA
(617) 963-9220

6) TOWN OF WEYMOUTH, MASSACHUSETTS - PUBLIC WORKS
Frank S. Lagrotteria, Director
120 Winter Street
Weymouth, MA
(617) 337-5100

7) TOWN OF BRISTOL, RHODE ISLAND
Anthony Iaesello, President
Town Hall
10 Court Street
Bristol, RI
(401) 253-7000

8) CITY OF WARWICK, RHODE ISLAND - PUBLIC WORKS
Russell J. Chateauneuf, Director
925 Sandy Lane
Warwick, RI
(401) 737-4360

EQUAL EMPLOYMENT OPPORTUNITY

This firm has instituted an "Affirmative Action Policy" relative to Equal Employment Opportunity and states its policies as follows:

1. This firm has designated Mr. Robert J. Grilli with the responsibility of insuring compliance with this program and advising all corporate officers of his progress.

2. Employment sources are to be advised that we are an Equal Opportunity Employer and will employ any qualified applicants without regard to their race, creed, color, national origin, sex, marital status, or physical disability.

3. All supervisory personnel are advised that discriminatory practices will not be tolerated and any such employee disregarding this directive will be subject to termination.

4. This firm will not have any segregated areas such as washrooms, rest areas, office space, eating and drinking areas, recreation facilities, etc.

5. This firm will cooperate fully with all local, federal, state, county and/or city agencies in recruiting minority groups for employment.

7. All office personnel are to be recruited and hired on the same basis as outlined above.

MICHAEL E. GRILLI, P.E.
President
BETA Engineering, Inc.

QUALIFICATIONS SUMMARY

Mr. Grilli has nearly twenty years of experience in the engineering and management of Civil Engineering projects. Currently, as a principal of BETA, he is responsible for providing senior technical leadership, quality control, budget control, client relations, coordinating the business development effort, and interfacing with regulatory agencies.

EXPERIENCE

Mr. Grilli has engineered and managed the planning, design and construction of tens of millions of dollars of water and wastewater facilities, storm drainage systems, and transportation facilities. These projects were located in many different municipalities and often, the projects were running concurrently. This necessitated the skillful management and supervision to insure successful project completion.

Among Mr. Grilli's notable accomplishments are the past management and continued management of the highly successful Burrillville, RI, Wastewater Treatment Project which has cost approximately $20 million. He has managed a wide range of environmental and transportation projects for the Rhode Island Department of Transportation, the Narragansett Bay Commission, and the Blackstone Valley District Commission. Mr. Grilli is thoroughly conversant with all features of BETA's work load.

EDUCATION	*B.S. - Civil Engineering* *Worcester Polytechnic Institute* *1967*
REGISTRATION	*Professional Engineer: Maine, Massachusetts, New York, Rhode Island, New Hampshire*
SOCIETIES	*American Society of Civil Engineers* *National Society of Professional Engineers* *New England Water Pollution Control Association* *Water Pollution Control Federation* *American Public Works Association* *Rhode Island Water Works Association* *Rhode Island Home Builders Association*

RAYMOND J. MARSHALL, P.E.
Vice President
BETA Engineering, Inc.

QUALIFICATIONS SUMMARY

Mr. Marshall has sixteen years of experience in civil engineering projects of varying types including environmental, transportation and site development. His professional expertise is in the areas of water and wastewater facilities planning, design and construction management. Mr. Marshall is responsible for the supervising of all aspects of BETA's engineering projects.

EXPERIENCE

Mr. Marshall, functioning as a Project Engineer/Manager, has experience over a wide range of responsibilities including designs, supervision of project personnel, budget control, public participation, and providing liaison services to clients, regulatory agencies, and contractors. His activities involving public works facilities in numerous communities and states have included: treatment plants, sewers, pump stations, force mains, drainage systems, water systems, site developments, traffic improvements and roadways. Mr. Marshall developed many of the projects from the conceptual stage through planning, design, construction and operation.

The original Director of the Wastewater Facilities in the Town of Burrillville, Rhode Island, Mr. Marshall was responsible for: operation and maintenance of the plan, supervision of collection system design and construction, and the administration and financial management of the department.

At BETA, Mr. Marshall has been instrumental in the firm's development from both a technical and managerial standpoint. He has been involved in the firm's key strategic decisions during the past six years and has taken an active role in the technical development of projects.

Mr. Marshall has been actively involved in numerous professional and civic activities including: member of the Rhode Island Board of Registration for Professional Engineers and Land Surveyors; Director of the Rhode Island Society of Professional Engineers; member of the evaluation team representing the Accreditation Board for Engineering and Technology which reviewed the engineering curriculum at the University of Rhode Island; member of the Smithfield, Rhode Island Planning Board; Vice President of the Smithfield Girls Softball League; and member of the Smithfield Recreation Department's Whipple Field Improvements Committee.

His broad and extensive background developed through education, experience, professional/civic involvement and hard work are brought to bear on all BETA's projects in order to provide our clients the best possible service.

RAYMOND J. MARSHALL, CONT.

EDUCATION

B.S. - Civil/Environmental Engineering,
University of Rhode Island, 1973

M.S. - Civil/Sanitary Engineering,
Northeastern University, 1978
Graduate Studies - Business Management
Bryant College, 1980 - 1986

REGISTRATION

Professional Engineer:
Connecticut, Maine, Massachusetts,
New Hampshire, Rhode Island

Certified Wastewater Treatment Plant
Operator, Grade IV: Rhode Island

SOCIETIES

National Society of Professional Engineers
American Consulting Engineers Council
American Public Works Association
Water Pollution Control Federation
American Water Works Association
Rhode Island Society of Professional Engineers
New England Water Pollution Control Association
New England Water Works Association

FRANK J. ROMEO, P.E.
Associate
BETA Engineering, Inc.

QUALIFICATIONS SUMMARY

Mr. Romeo has over ten years of experience in the fields of Transportation and Traffic Engineering. At BETA, Mr. Romeo's responsibilities include all aspects of traffic signal design, transportation planning and highway design.

EXPERIENCE

During the past ten years, Mr. Romeo has worked on a variety of transportation projects. He has functioned as Project Engineer in the preparation of a Corridor/Location Study and Draft Environmental Impact Statement for three major freeway projects in Rhode Island. His responsibilities included traffic analysis, environmental impact evaluation, cost/benefit analysis and the highway design aspects of these projects.

Mr. Romeo also served as Traffic Engineer and City Engineer for the City of Warwick, RI. His responsibilities included all traffic and safety related matters such as traffic flow studies, pedestrian studies and signal design, in addition to installation and maintenance of all signing and pavement markings throughout the City. After assuming the position of the City Engineer, his additional responsibilities included design and review of design of City roads and drainage systems, and the engineering evaluation of any proposed development within the City.

In addition, Mr. Romeo has conducted traffic studies and analysis for private developments and for major public works projects and final design for traffic engineering features of highway projects including geometric layout of roadways, traffic signal design, signing and pavement marking layout.

EDUCATION

B.S. - Civil Engineering
Northeastern University, 1974

M.S. - Transportation Engineering
Northeastern University, 1977

REGISTRATION

Professional Engineer: Rhode Island, Connecticut

MICHAEL S. VIGNALE, P.E.
Project Engineer/Manager
BETA Engineering, Inc.

QUALIFICATIONS SUMMARY

Mr. Vignale has nine years of experience in the design of Civil Engineering projects. At BETA, Mr. Vignale's responsibilities include the planning and design of highway and site development projects, supervision of plan preparation and contract documents, report preparation, and computer design/drafting applications.

EXPERIENCE

During the past nine years, Mr. Vignale has gained extensive experience on a variety of highway design projects including several for the Rhode Island Department of Transportation. His responsibilities have included the geometric layout of roadways, intersection design, traffic signal design, field surveys, structural design, pavement structure analysis and design, preparation of highway condemnation plats, and the design of storm drainage, water and sewer systems. As Project Engineer on highway design projects, Mr. Vignale has also supervised personnel in all phases of project design and the preparation of cost estimates, final plans and contract documents.

In addition Mr. Vignale has served as a Project Engineer/Manager on a variety of projects including residential, commercial and industrial developments, drainage studies and design, flood plain elevation studies and municipal building site designs. His duties have included site planning, grading design, storm drainage design, utility design, detention/retention basin design, parking lot design, hydrology and hydraulics computer modeling for flood plain delineation and flood control structure design and coordinating all types of permitting.

EDUCATION	*B.S. - Civil Engineering, Roger Williams College, 1984*
	A.S. - Civil Engineering Technology, Wentworth Institute of Technology, 1980
REGISTRATION	*Professional Engineer: Rhode Island Massachusetts*
SOCIETIES	*American Society of Civil Engineers* *American Soil and Water Conservation Society* *Institute of Transportation Engineers*

JAMES C. COPPOLA
Principal Planner
BETA Engineering, Inc.

QUALIFICATIONS SUMMARY

Mr. Coppola has fifteen years of experience in the fields of City Planning, Community and Economic Development. His responsibilities at BETA include, project management; land use planning; federal, state and local liaison work; client development and support activities.

EXPERIENCE

As a new member of the BETA Engineering team, Mr. Coppola brings an extensive background in civil service to our firm. As a City Planner for 11 years and the City of Warwick, RI's Community Development Director for the past four years, Mr. Coppola is familiar with all aspects of city government.

While with the City of Warwick, Mr. Coppola was lead staff person in the Planning Department for Housing, Land Use, Zoning and Transportation Planning. He served as an Ex-Official member of Warwick's Housing Board and was also a member of the Group Homes Commission. As Community Development Director, Jim worked extensively with neighborhood organizations, local residents and merchants. His effort in this area resulted in the revitalization of several neighborhoods and led to the subsequent reinvestment in these areas by private parties. Mr. Coppola also has extensive experience in both commercial and residential rehabilitations, having managed those programs for the City of Warwick for the past four years. Mr. Coppola was also a member of the Homeless Task Force and Senior Center Building Committee while with the City.

At BETA Engineering, Mr. Coppola is now the Principal Planner for the Subarea Analysis Study of the Quonset Point Technical Park in North Kingstown, RI.

EDUCATION

B.S. - Resource Development
University of RI, Kingstown, RI, 1972
M.B.A. - Bryant College, Smithfield, RI, 1987

MARK F. BERTONCINI, P.E.
Project Engineer
BETA Engineering, Inc.

QUALIFICATIONS SUMMARY

Mr. Bertoncini is a Civil Engineer with experience in engineering and coordinating the reconstruction of transportation facilities and site development. Currently as a project engineer at BETA, he is responsible for providing technical assistance and the design and coordination of civil engineering projects.

EXPERIENCE

Mr. Bertoncini has engineered and coordinated several projects involving the reconstruction of highway and airport transportation facilities. His expeirence includes computing horizontal and vertical alignments, grading, design of storm drainage systems, preparation of right-of-way and plat plans, coordination with wetland regulatory agencies, preparation of Design Study Reports, utility coordination, quantity take-off, preparation of engineering construction estimate and construction contract documents. Mr. Bertoncini is also familiar with the guidelines and policies set forth by the Rhode Island Department of Transportation, Federal Highway Administration and Federal Aviation Administration.

EDUCATION	*B.S. Civil Engineering* *University of Rhode Island, 1983*
REGISTRATION	*Professional Engineer: Rhode Island, Massachusetts*
SOCIETIES	*American Society of Civil Engineers* *Tau Beta Pi - Engineering Honor Society*

ROBERT S. WALDECK, P.E.
Structural Engineer
BETA Engineering, Inc.

QUALIFICATIONS SUMMARY

Mr. Waldeck has over five years of experience in the field of Structural Engineering. His responsibilities at BETA include the analysis and design of structural engineering projects ranging from highway bridges to building systems.

EXPERIENCE

Mr. Waldeck's professional experience includes the computer analysis, design, and program development on numerous structural engineering projects. His experience on highway bridge projects includes both design and specification preparation, resulting in a thorough knowledge of RIDOT standards and procedures.

Mr. Waldeck's experience has included analysis, design, preparation of specifications and construction management on numerous short span bridges, retaining walls, foundations and waterfront structures. His projects have included the design of steel, concrete and precast concrete structures.

EDUCATION	*B.S. - Civil/Structural Engineering* *University of Rhode Island, 1983*
	Graduate Course Work - University of Rhode Island *University of Connecticut*
REGISTRATION	*Professional Engineer: Rhode Island*
SOCIETIES	*American Society of Civil Engineers*

ANNA NOVO
Staff Engineer
BETA Engineering, Inc.

QUALIFICATIONS SUMMARY

Ms. Novo has five years of experience in the field of Civil Engineering. Her responsibilities at BETA include design projects, supervision of plan preparation and contract documents, field surveys, report preparation as well as a variety of support services.

EXPERIENCE

Ms. Novo's project experience has included roadway and storm drainage design for state highway reconstruction and private site development projects. For the Reconstruction of Gooding Avenue in Bristol, RI, which was comprised of approximately 4300 feet of roadway reconstruction; her responsibilities included the geometric design of the roadway, a new closed drainage system, the preparation of the right-of-way plans, construction cost estimates, and coordination with the RIDOT.

Ms. Novo prepared the site and parking lot layout and designed the storm detention basins and grading for a shopping center in Woonsocket, RI. For a waterfront development project in Newport, Ms. Novo designed the sewer system including grinder pumps needed to service the existing and proposed residential units.

Ms. Novo's engineering background also includes various sewer design projects. She designed 20,000 feet of sewer line, a pump station, and an ejector station for the Valley Falls Sewer Project in the Town of Cumberland, Rhode Island. She was involved in the preliminary design stages for the Spring Lake Sewer Project in Burrillville, RI, which included the preparation of easement plans and descriptions for a large portion of the design routing. A project for the Metropolitan District Commission in Massachusetts, which was comprised of two parts; the review of existing septic systems in the Trailside Museum and the Milton Police Station, a design report for possible alternatives and recommendations and the design of a Sanitary Sub-Surface Disposal System for Peddock's Island in Massachusetts.

EDUCATION	*B.S. in Civil Engineering* *Roger Williams College,* *Bristol, Rhode Island, 1985*
	Graduate Course in Civil Engineering *at URI 9/86-12/86*
SOCIETIES	*American Society of Civil Engineers*

SHAUN SCULLY
Environmental Scientist
BETA Engineering, Inc.

QUALIFICATIONS SUMMARY

Mr. Scully has experience in a variety of environmental fields. His responsibilities include identifying and evaluating project impacts upon environmental systems, and their associated local, state and federal permitting procedures.

EXPERIENCE

Mr. Scully was responsible for the environmental review and permitting for a drainage system project and a brook rehabilitation project for the Town of Randolph, Massachusetts Highway Department. He also has performed the hydrological studies and filed required permits, including U.S. Army Corps of Engineers Section 404, for the rehabilitation project for Pine Tree Brook for the Town of Milton, Massachusetts.

Recently, Mr. Scully has completed a Massachusetts Clean Lakes study in the investigation and sewer inspection of the Belmont Street Drain in Worcester, Massachusetts, which discharges to Lake Quinsigamond. Investigations conducted along the Belmont Street Drain and tributary intersecting streets within the study area included physical inspection of drain manholes and associated connections, dye/flush testing, and water sampling analyses. The study has determined the sources of pollution and inflow/infiltration and identified and evaluated the feasibility of corrective actions considered for pollution control and problem areas to improve water quality.

Mr. Scully is currently preparing permit applications for a proposed solid waste facility in the Town of Weymouth, Massachusetts. The permits required for this facility include an Environmental Notification form, an Environmental Impact Statement, a Site Assignment from the Weymouth Board of Health and an Air Quality (PSD) permit from the DEQE - Division of Air Quality. He is also conducting a complete hydrogeologic study to obtain a DEQE - Division of Solid Waste Permit for an ash residue landfill proposed at this facility.

His experience includes coordination with local, state and federal agencies and knowledge of their respective permitting procedures for land development and utility projects involving wetlands, drainage design, and watershed studies.

EDUCATION

B.S. Environmental Science
University of Massachusetts, 1985

KEVIN B. MINNIGERODE
Staff Engineer
BETA Engineering, Inc.

QUALIFICATIONS SUMMARY

Mr. Minnigerode has three years of Civil Engineering project experience in performing field surveys, construction inspections, traffic studies, and the preparation of roadway, drainage and utilities design plans for state highway design and site development projects. At BETA, his responsibilities include all design and field work associated with roadway planning and design, and land development projects.

EXPERIENCE

Mr. Minnigerode has three years of experience in the Civil Engineering field with project experience emphasis on Highway Design and Transportation Planning. For several Rhode Island Department of Transportation highway reconstruction projects, his responsibilities have included roadway and drainage design, utility inventory and coordination, right-of-way easement descriptions, and construction cost estimates. He also has conducted inspections and cost-benefit analyses of state highway guardrails for a statewide guardrail-upgrade project for the RIDOT. For a traffic circulation study for a RIDOT Transportation Planning project, Mr. Minnigerode conducted traffic studies and analyses, accident data research and analysis, and participated in performing an origin-destination study.

In addition to RIDOT Highway Design and Transportation Planning projects, Mr. Minnigerode's work experience has included private site development projects in which his responsibilities have included site planning, roadway and parking facilities design, storm drainage design, and utility layout. He also has served a party chief for field survey of proposed residential developments.

Mr. Minnigerode also has served as a construction inspector during the reconstruction of the Fields Point Wastewater Treatment Plant for the Narragansett Bay Commission.

For the Quonset State Airport pavement rehabilitation project, Mr. Minnigerode was responsible for utilities inventory, topographic site survey and project coordination with the Rhode Island Port Authority and the Rhode Island Air National Guard. He is an active member of the Rhode Island Air National Guard, serving as a military navigator for C130 aircraft, and is also a licensed private pilot.

EDUCATION

B.S. - Civil Engineering
South Dakota School of Mines and Technology, 1986
B.A. - Political Science
University of Maryland, 1972